Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

Claims 1-22 (Canceled).

1   23. (Currently Amended) A method of outlier detection comprising:

2   generating a plurality of synthesized data, each representing a <u>randomly</u>

3   <u>generated</u> state within a given vector space, said generating including a random

4   number generation;

5   receiving a plurality of real sample data, each representing a detected real

6   event as represented in said given vector space;

7   forming a candidate sample set comprising a union of at least a part of

8   said plurality of synthesized data and said plurality of real sample data, said

9   candidate sample set having a starting population, said candidate sample set

10   being unsupervised as to which members will be classified by said method as

11   being outliers;

12   generating a set of classifiers, each member of said set being a procedure

13   or a representation for a function classifying an operand data as an outlier or a

14   non-outlier, said generating a set of classifiers including:

15   initializing said set of classifiers to be an empty set,

16   selectively sampling said candidate sample data to form a learning

17   data set, said selectively sampling including<u>XX:XX</u>

18   i) applying said set of classifiers to each of said candidate

19   sample data and, if any classifiers are extant in said set, generating

20   a corresponding set of classification results,

21   <u>ii) identifying a consistency, for each of said candidate</u>

22   <u>sample data, among said data's corresponding set of classification</u>

23   <u>results,</u>

24   iii) calculating an uncertainty value for each of said candidate

25   sample data based on said identified consistency of said data's

26   corresponding set of classification results,

27   iv) ii) calculating a sampling probability value for each of said

28   candidate sample data based, at least in part, on the corresponding

29   uncertainty value based on said set of classification results, and

30   v) iii) sampling from said candidate data to form said learning

31   data set based, at least in part, on said sampling probability values,

32   such that said learning data set has a population substantially lower

33   than the starting population,

34   generating another classifier based on said learning data set,

35   updating said set of classifiers to include said another classifier,

36   and

37   repeating said selectively sampling, said generating another

38   classifier, and said updating until said set of classifiers includes at least t

39   members; and

40   generating an outlier detection algorithm based, at least in part, on at least

41   one of said another classifiers, for classifying a datum as being an outlier or a

42   non-outlier.

1   24. (Currently Amended) The method of claim 23, further comprising:

2   receiving a given mis-classifying mis-characterizing cost data associated

3   with at least one of said synthesized samples, representing a cost of said outlier

4   detection algorithm mis-classifying mis-characterizing said at least one

5   synthesized sample as a non-outlier.

1   25. (Currently Amended) The method of claim 24, wherein said constructing said

2   learning data set from said candidate sample data is further based on said mis-

3   classifying mis-characterizing cost

1   26. (Currently Amended) The method of claim 23, wherein said ~~calculating a~~
2   ~~sampling probability value includes identifying a consistency within said set of~~
3   ~~classification results and~~ calculating a probability of said identified consistency
4   <u>uses</u> ~~using~~ a Binomial probability function.

1   27. (Currently Amended) The method of claim 23, wherein said ~~calculating a~~
2   ~~sampling probability value includes identifying a consistency within said set of~~
3   ~~classification results and~~ calculating a probability of said identified consistency
4   <u>uses</u> ~~using~~ a Gaussian probability function.

1   28. (Currently Amended) The method of claim 23, said ~~machine-readable code~~
2   ~~for~~ generating synthesized data generates said synthesized data in accordance
3   with a given statistical likelihood of said generated data meeting an outlier
4   criterion.

1   29. (Previously Presented) The method of claim 23, wherein said generating an
2   outlier detection algorithm generates the outlier detection algorithm such that
3   said algorithm applies an aggregate of members of said set of classification
4   algorithms, calculates a corresponding set of detection result data representing
5   each of said aggregate's member's classification, and applies a voting scheme to
6   said corresponding set of detection result data.

1   30. (Currently Amended) The method of claim 23, wherein said ~~calculating of~~
2   ~~said uncertainty value includes identifying a consistency among said set of~~
3   ~~classification results, and~~ calculating a probability of said consistency <u>assumes</u>~~,~~
4   ~~assuming~~ each classification result within said set has a 50-50 probability of
5   representing an operand as meeting <u>an outlier</u> ~~said alarm~~ criterion, statistically
6   independent of said operand and of all other classification results within said set.

1   31. (Currently Amended) The method of claim 30, wherein said ~~calculating a~~
2   ~~sampling probability value further includes~~ calculating a probability of said
3   identified consistency <u>uses</u> ~~using~~ a Binomial probability function.

1   32. (Currently Amended) The method of claim 30, wherein said ~~calculating a~~
2   ~~sampling probability value further includes~~ calculating a probability of said
3   identified consistency <u>uses</u> ~~using~~ a Gaussian probability function.

1   33. (Currently Amended) The method of claim 28, wherein said ~~calculating of~~
2   ~~said uncertainty value includes identifying a consistency among said~~
3   ~~classification results, and~~ calculating a probability of said consistency, ~~assuming~~
4   <u>assumes</u> each classification result within said set has a 50-50 probability of
5   representing an operand as meeting said <u>outlier</u> ~~alarm~~ criteria, statistically
6   independent of said operand and of all other classification results within said set.

1   34. (Currently Amended) The method of claim 33, wherein said ~~calculating a~~
2   ~~sampling probability value further includes~~ calculating a probability of said
3   identified consistency <u>uses</u> ~~using~~ a Binomial probability function.

1   35. (Currently Amended) The method of claim 33, wherein said ~~calculating a~~
2   ~~sampling probability value further includes~~ calculating a probability of said
3   identified consistency <u>uses</u> ~~using~~ a Gaussian function.

1   36. (Currently Amended) A system for classifying externally detected samples as
2   one of at least normal and an outlier, comprising:
3   a machine controller having a readable storage medium;
4   a machine-readable program code, stored on the machine-readable
5   storage medium, having instructions to:
6   generate a plurality of synthesized data, each representing a <u>randomly</u>
7   <u>generated</u> state within a given vector space, said generating including <u>generating</u>
8   a random number ~~generation~~;

9   receive a plurality of real sample data, each representing an observed

10   event as represented in said given vector space;

11   form a candidate sample set comprising a union of at least a part of said

12   plurality of synthesized data and said plurality of real sample data, said candidate

13   sample set having a starting population;

14   generate a set of classifiers, each member of said set being a procedure

15   or a representation for a function classifying an operand data as ~~a rare event or~~

16   an outlier <u>or a non-outlier</u>, said generating a set of classifiers including:

17   initializing said set of classifiers to be an empty set,

18   selectively sampling said candidate sample data to form a learning

19   data set, said selectively sampling including<u>XX:XX</u>

20   i) applying said set of classifiers to each of said candidate

21   sample data and, if any classifiers are extant in said set, generating

22   a corresponding set of classification results, ~~and~~

23   <u>ii) identifying a consistency, for each of said candidate</u>

24   <u>sample data, among said data's corresponding set of classification</u>

25   <u>results,</u>

26   <u>iii) calculating an uncertainty value for each of said candidate</u>

27   <u>sample data based on said identified consistency of said data's</u>

28   <u>corresponding set of classification results,</u>

29   <u>iv)</u> ~~ii)~~ calculating a sampling probability value for each of said

30   candidate sample data based, at least in part, on the corresponding

31   <u>uncertainty value based on said</u> set of classification results, and

32   <u>v)</u> ~~iii)~~ sampling from said candidate data to form said learning

33   data set based, at least in part, on said sampling probability values,

34   such that said learning data set has a population ~~substantially~~ lower

35   than the combined first and second population,

36   generating another classifier based on said learning data set,

37   updating said set of classifiers to include said another classifier,

38   and

39   repeating said selectively sampling, said generating another
40   classifier, and said updating until said set of classifiers includes at least *t*
41   members; and
42   to generate an outlier detection algorithm based, at least in part, on
43   at least one of said another classifiers, for classifying a datum as being an
44   outlier or a non-outlier.

1   37. (Currently Amended) The method of claim 36, wherein said machine-
2   readable program code further comprises instructions for:
3   receiving a given mis-classifying mis-characterizing cost data associated
4   with at least one of said example abnormal state data, said cost data
5   representing a cost of said outlier detection algorithm mis-classifying mis-
6   characterizing a data equal to said abnormal state data as not meeting an outlier
7   said alarm criterion.

1   38. (Currently Amended) The system of claim 36, wherein said machine-readable
2   code instructions constructing said learning data set from said candidate sample
3   data include instructions for constructing said learning data based, at least in
4   part, on said mis-classifying mis-characterizing cost.

1   39. (Currently Amended) The system of claim 36, wherein said machine-readable
2   code instructions for calculating a sampling probability value include instructions
3   for identifying a consistency within said set of classification results and
4   calculating a probability of said identified consistency include instructions for
5   calculating said probability using a Binomial probability function.

1   40. (Currently Amended) The system of claim 36, wherein said machine-readable
2   code instructions for calculating a sampling probability value include instructions
3   for identifying a consistency within said set of classification results and
4   calculating a probability of said identified consistency include instructions for
5   calculating said probability using a Gaussian probability function.

1   41. (Currently Amended) The system of claim 36, wherein said machine-readable

2   code instructions for generating synthesized data include instruction for

3   generating said data in accordance with a given statistical likelihood meeting an

4   outlier criterion.

1   42. (Previously Presented) The system of claim 36, wherein said machine-

2   readable code instructions for generating the outlier detection algorithm include

3   instructions such that said algorithm applies an aggregate of members of said set

4   of classification algorithms, calculates a corresponding set of detection result

5   data representing each of said aggregate's member's classification, and applies

6   a voting scheme to said corresponding set of detection result data.

1   43. (Currently Amended) The system of claim 36, wherein said machine-readable

2   code instructions for calculating said uncertainty value include instructions for

3   identifying a consistency among said set of classification results, and calculating

4   a probability of said consistency, assuming that assume each classification result

5   within said set has a 50-50 probability of representing an operand as meeting an

6   outlier said alarm criterion, statistically independent of said operand and of all

7   other classification results within said set.

1   44. (Currently Amended) The system of claim 36, wherein said machine-readable

2   code instructions for calculating a sampling probability value include instructions

3   for calculating a probability of said identified consistency include instructions for

4   calculating said probability using a Binomial probability function.

1   45. (Currently Amended) The system of claim 36, wherein said machine-readable

2   code instructions for calculating a sampling probability value include instructions

3   for calculating a probability of said identified consistency include instructions for

4   calculating said probability using a Gaussian probability function.

1   46. (Currently Amended) The system of claim 41, wherein said machine-readable

2   code instructions for calculating of said uncertainty value include instructions ~~for~~

3   ~~identifying a consistency among said set of classification results, and calculating~~

4   ~~a probability of said consistency, assuming~~ that assume each classification result

5   within said set has a 50-50 probability of representing an operand as meeting

6   said outlier criterion ~~alarm criteria~~, statistically independent of said operand and

7   of all other classification results within said set.

1   47. (Currently Amended) The system of claim 45, wherein said machine-readable

2   code instructions for calculating ~~a sampling probability value include instructions~~

3   ~~for calculating~~ a probability of said identified consistency include instructions for

4   calculating said probability using a Binomial probability function.

1   48. (Currently Amended) The system of claim 45, wherein said machine-readable

2   code instructions for calculating ~~a sampling probability value include instructions~~

3   ~~for calculating~~ a probability of said identified consistency include instructions for

4   calculating said probability using a Gaussian probability function.